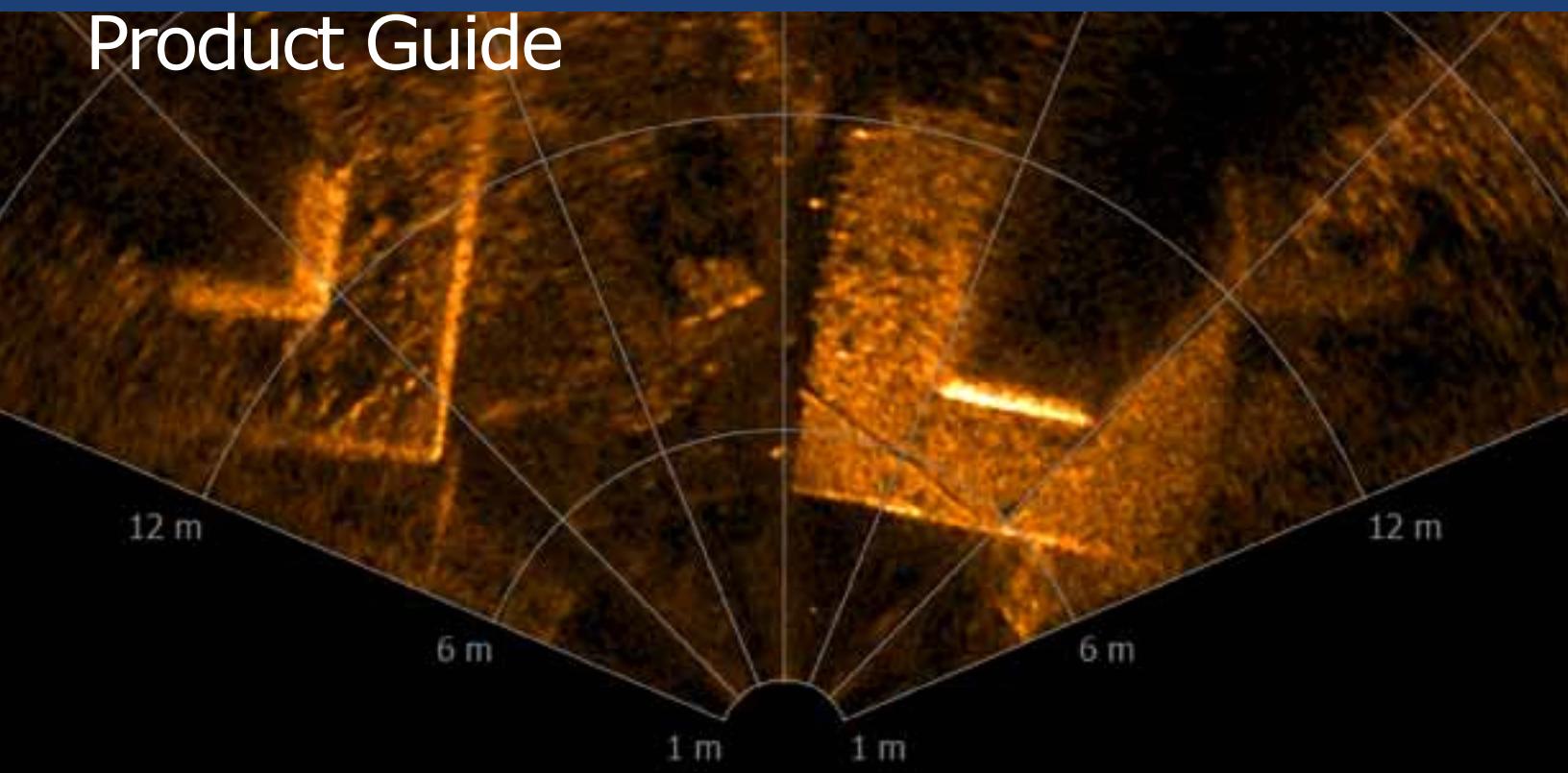


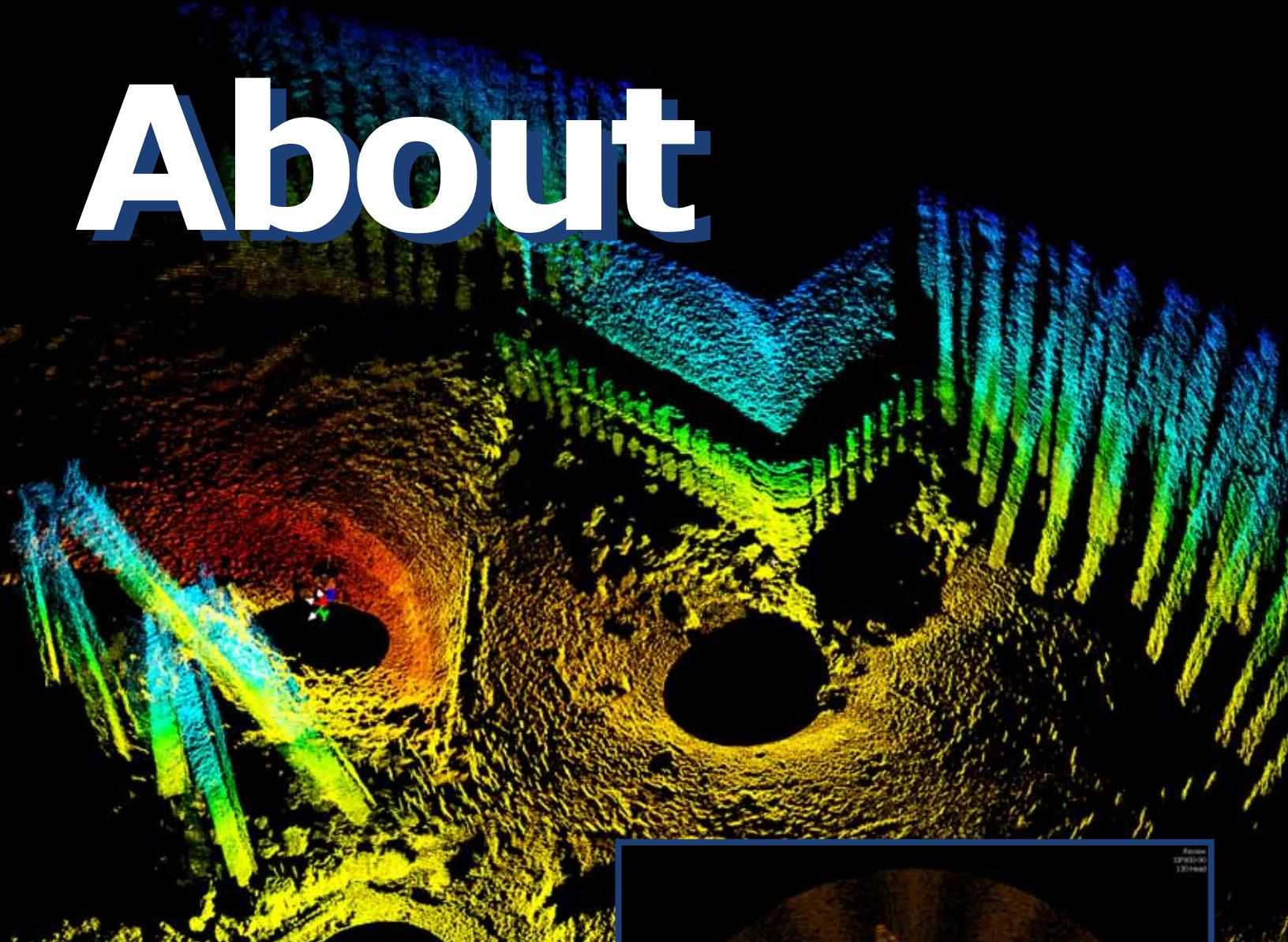
# 2011

*Underwater Vision Made Easy*

## Product Guide



# About

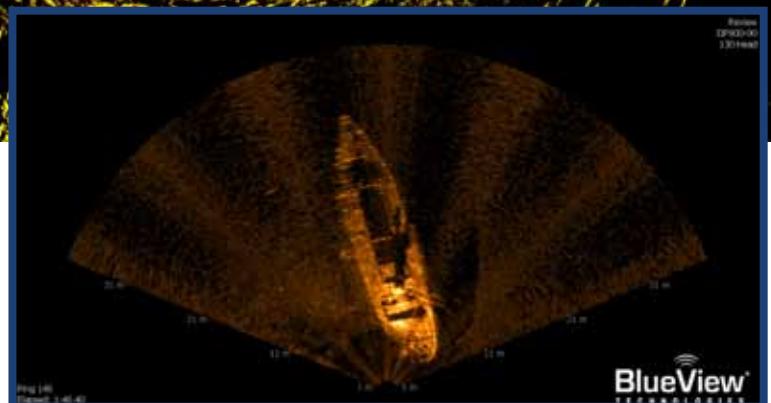


## Delivering Underwater Vision Solutions

Since 2005, BlueView Technologies, Inc. has delivered state of the art, compact acoustic imaging and measurement solutions for defense, energy, civil engineering, transportation, and port security applications worldwide. BlueView's advanced sonar systems have been adopted by leading manufacturers and service providers to support mission critical underwater operations. Today, BlueView systems are integrated onto a wide variety of underwater platforms, including:

- ROVs
- AUVs
- Surface Vessels
- Fixed Mounts
- Portable Tripods
- Diver Hand Held Systems

BlueView customers enjoy a low cost of ownership with reliable operation, exceptional service, on-site training, extensive online information, and worldwide after-sale support.



## Made Easy

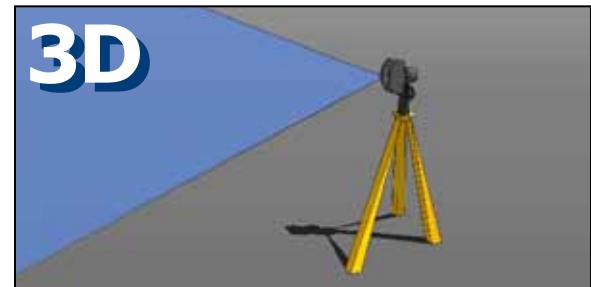
Since its founding, BlueView has pioneered new technologies in high-resolution underwater acoustic imaging and measurement, delivering solutions that have grown to become mission critical instruments for underwater navigation, monitoring, survey, and detection. BlueView focuses on delivering advanced, compact systems that are easy to use and enable safe, secure, and efficient underwater operations.

We draw our inspiration from the dedication of the underwater operators we serve with a deep appreciation for the challenges they face daily, and strive to deliver solutions that make their jobs easier. BlueView continues to expand its product lines and services to meet emerging customer needs, creating new, easier to use underwater acoustic imaging and measurement solutions.



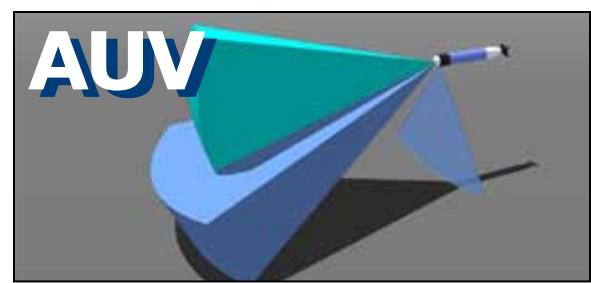
## BlueView Imaging Technologies

BlueView high-resolution underwater acoustic imaging and measurement systems provide solutions in a variety of applications.



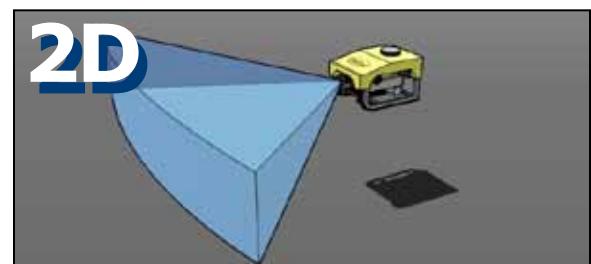
### 3D Mechanical Scanners

BlueView's 3D Mechanical Scanners create high-resolution, fully rotational 3D data, and capture accurate measurements of underwater structures, objects, and sites providing detailed maps for engineering and surveying operations.



### AUV Systems

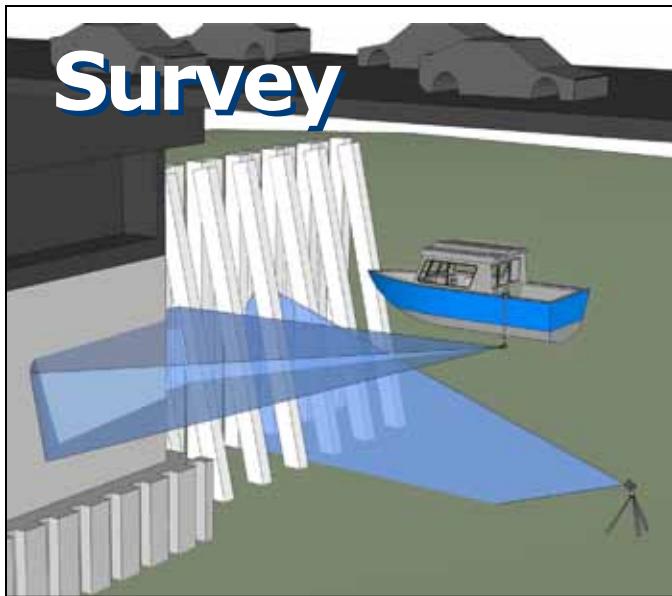
Today, Autonomous Underwater Vehicles (AUVs) play an increasing role in surveying, mapping, and navigating underwater areas. BlueView provides the most compact, lowest power, configurable systems for real-time navigation, obstacle avoidance, and high-resolution 3D "gap-fill" mapping solutions.



### 2D Acoustic Cameras

BlueView's comprehensive family of compact 2D Imaging Sonar provide real-time streaming video-like imagery to aid navigation, inspection, monitoring, and detection for a wide variety of underwater operations.

# Integrated Solutions



## Survey

Underwater environments are complex and typically associated with low visibility conditions. BlueView improves your survey operations with precision instruments engineered to operate in low and zero-visibility conditions to increase up-time, enable efficient planning, and deliver detailed, accurate results.

### Quick, Real-Time Inspections

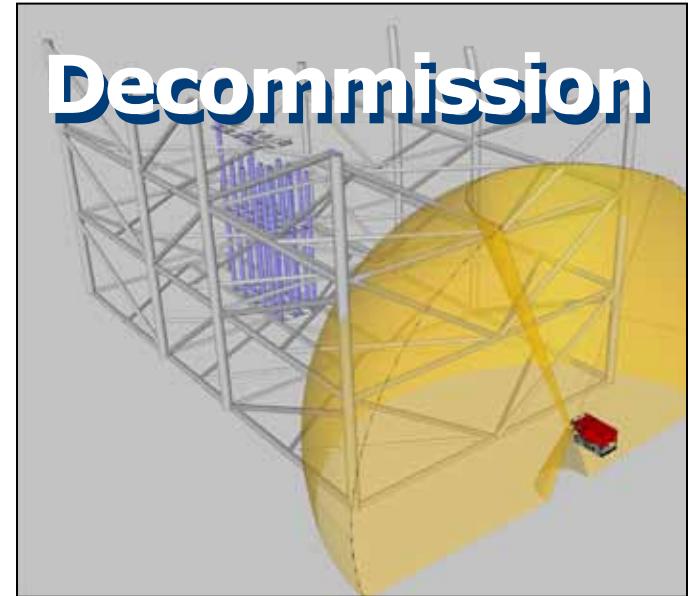
BlueView offers 2D Imaging Sonar systems that enable quick, real-time inspections of areas and structures from surface vessels or ROVs to assess the conditions and enable effective pre-survey planning. Detect, identify, and measure obstacles and potential hazards that may pose risks to your underwater survey operations with a BlueView 2D Imaging Sonar system.

### High-Resolution 3D Underwater Structure/Area Mapping

Create detailed 3D renderings of complex underwater structures and areas with BlueView's 3D Mechanical Scanning systems. Deployed on a portable tripod or ROV to gather critical as-is condition imagery and data to improve decision making and reduce planning errors. These systems operate much like a topographic laser scanner using sound to produce high-resolution data and 3D mosaic imagery.



BV5000 3D Mechanical Scanner,  
portable tripod system.  
See pages 6 - 9 for details.



## Decommission

BlueView is pioneering new acoustic imaging technologies to provide greater efficiency in offshore platform decommissioning. BlueView combines cutting-edge 3D acoustic imaging and measurement technology with state-of-the-art real-time 2D navigation systems to create ROV based solutions that work faster, easier, and provide more accurate data than traditional underwater survey systems.

### Precise, Real-Time Navigation

BlueView's 2D Deepwater Imaging Sonar provide real-time navigation data and imagery at depths down to 3,000 meters. Use the ROV deployed 2D systems to rapidly navigate and position the ROV while conducting 3D scanning operations.

### Faster imagery and easier measurements

The BlueView BV5000 Mechanical Scanning Sonar can be deployed on an ROV to make accurate 3D scans for effective and efficient planning of underwater decommissioning projects. Using Leica Geosystems' Cyclone software, the scans can create accurate models for export to CAD. The BV5000 systems capture accurate imagery and data akin to topographic laser scanners, and do not require complex positioning data inputs.



BV5000 3D Mechanical Scanner, ROV system.  
See pages 6 - 9 for details.

## Pipeline Inspection



As AUVs play increasing roles in underwater operations, BlueView is expanding its line of modular acoustic systems engineered specifically for AUV integration. BlueView enhances AUV operations with compact, low-power sensors that can be used separately or combined for integration onto new and existing platforms for applications such as pipeline inspection.

### Best-in-Class Pipeline Tracking & OAS

BlueView combines its compact 2D imaging sonar into a single system that utilizes both horizontal and vertical field-of-view to deliver unmatched tracking and obstacle avoidance (OAS). The low-power system can be customized to fit specific AUV body types and styles making integration easy while maintaining system hydrodynamics.

### 3D Gap Fill

Traditional side-scan sonar often has a gap directly below the AUV that requires overlapping passes to cover the survey area. BlueView offers 3D MicroBathymetry systems that fill the gap and eliminate the need for overlapping passes, significantly reducing mission time. Further, the high-fidelity 3D imagery provides next generation pipeline survey with unmatched inspection detail and data.



MB2250 3D MicroBathymetry Sonar head.  
See pages 10 - 13 for details.

## Search & Recovery



Searching wide underwater areas in low or zero visibility conditions quickly from a topside position enhances search rates and improves safety. BlueView's family of 2D imaging systems can be deployed from a surface vessel, ROV, tripod, or diver hand held system to enable quick detection, target acquisition, and critical navigation-to-target data.

### Faster, Safer Operations Monitoring

Poor visibility conditions and hazardous environments complicate search and recovery efforts, extend search times, and place divers at risk. Topside personnel get clear, real-time, video-like imagery with BlueView 2D Imaging Sonar to detect targets, gather situational awareness data, and monitor divers to avoid potential hazards.

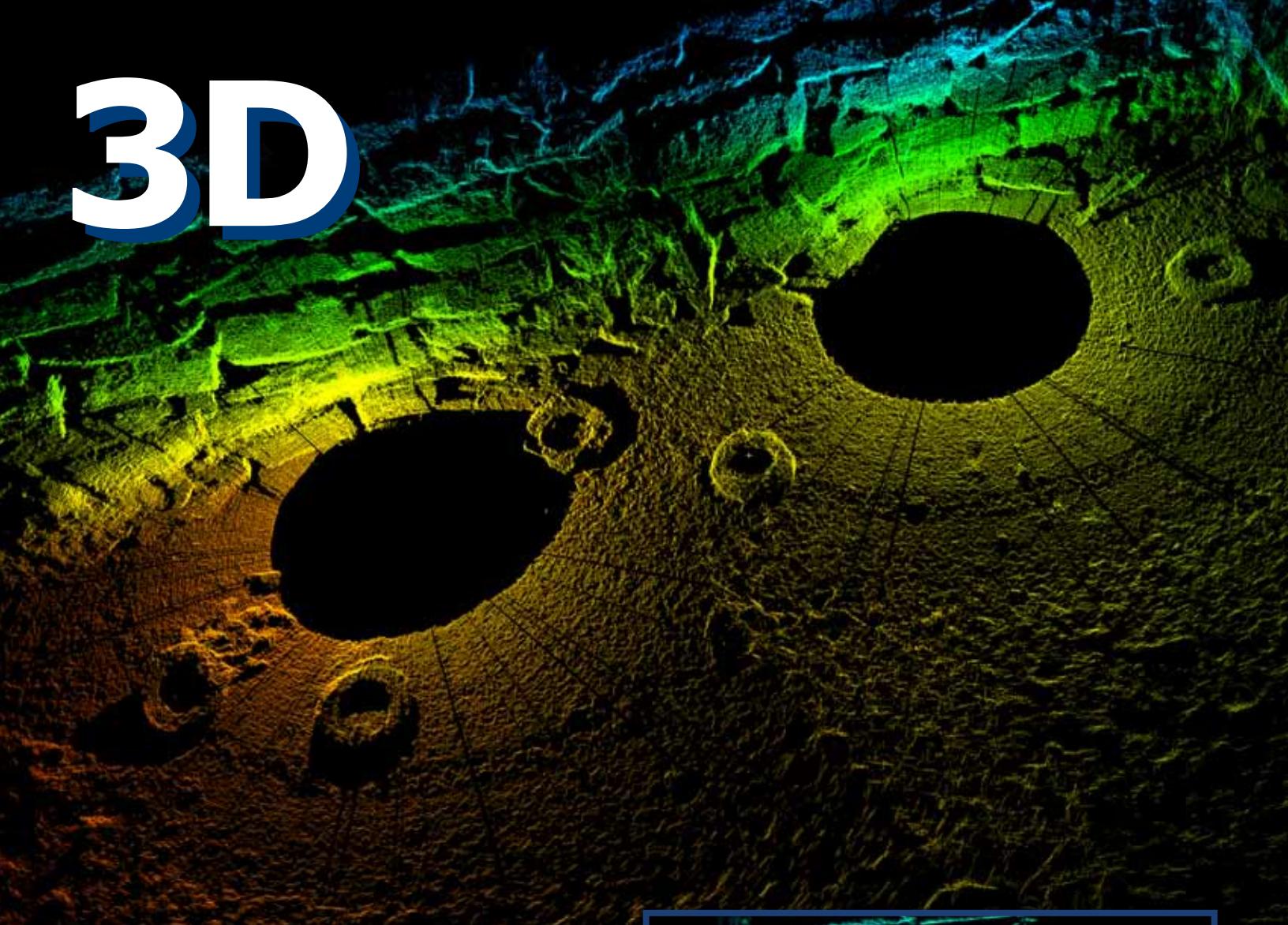
### Save Time, Improve Effectiveness

ROVs and diver hand held systems outfitted with BlueView 2D Imaging Sonar Systems can reacquire and home to detected targets quickly, even in low or zero visibility conditions. Their fast update rate combined with the widest field-of-view available enable operation as an acoustic camera capturing both moving and fixed targets while in motion or from a stationary position.



P Series 2D Imaging Sonar head.  
See pages 14 - 17 for details.

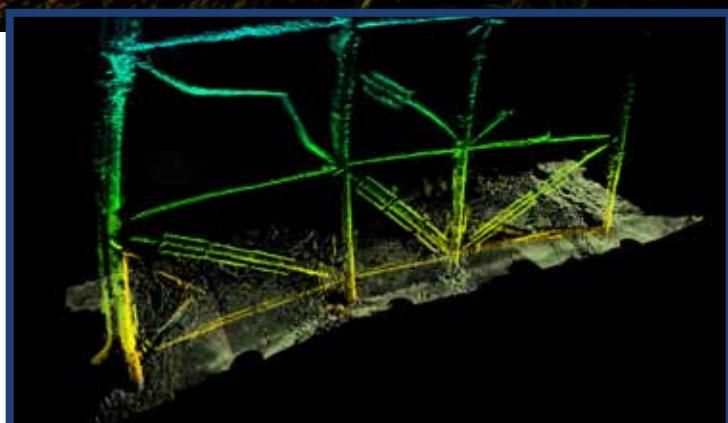
# 3D



## 3D Mechanical Scanning Systems

BlueView uses new high-resolution profiling sonar technology to create an easy-to-use underwater 3D scanner, the BV5000 system. The compact, lightweight BV5000 works much like a topographic laser scanner, and uses high frequency sound beams instead of lasers to create extremely detailed 3D imagery and collect accurate measurement data. Designed for high portability and easy integration, the BV5000 system can be deployed on a tripod, ROV, or fixed mount. Operating from a stationary position, the BV5000 creates full 360° rotational scans. Multiple overlapping scans can be registered with or without navigation data to create mosaic images of large structures or areas.

All BV5000 3D Mechanical Scanning Systems include BlueView's ProScan® software and 3D viewer. The BV5000 data is stored in both raw format for post processing, and a standard .xyz point cloud format for easy import to multiple 3D viewing programs. BlueView is an authorized Leica Geosystems distributor, providing access to its powerful Cyclone software to create 3D mosaic imagery and model standard components for CAD export.



### Typical 3D Mechanical Scanning Applications:

- 3D Site Survey
- 3D Structure Survey
- 3D Structure Inspection
- Structure Decommissioning
- Bridge Inspections
- Dam Inspections
- Seawall and Pier Inspections
- Condition Monitoring
- Scour and Erosion Monitoring
- Spool Piece Metrology
- Archeological Site/Structure Mapping
- Ship Hull Inspections and Mapping



## 3D Mechanical Scanning Systems

BlueView 3D Mechanical Scanning Systems are highly portable instruments that create high-resolution 3D imagery and capture accurate measurement data of underwater structures, objects, and sites.

### **BV5000-1350**

The perfect balance between range and resolution. The BV5000-1350 is specifically designed for imaging complex underwater structures and areas with an operating frequency of 1.35 MHz that enables ranges of 1 – 30 m (3.2 – 98 ft.).



### **BV5000-2250**

Engineered for ultra-high 3D resolution, the BV5000-2250 delivers unprecedented imagery and detail at close range. The 2.25 MHz operating frequency enables ultra-high resolution 3D scans with ranges of 0.5 – 10 m (1.6 – 32 ft.).



### **Portable Tripod & ROV Systems**

The BV5000 can be deployed on ROVs or with BlueView's portable lightweight tripod. Operating from a stationary position the BV5000 will capture 360° spherical scans. When combined with the portable lightweight tripod the BV5000 can be easily deployed from a surface vessel into tight areas enabling 3D scans of hard to reach areas. From an ROV the compact, lightweight BV5000 can be maneuvered into or around complex structures capturing imagery and measurement data of structures and areas previously not accessible with traditional mapping and measurement solutions.



# 3D Specs & Applications

BV5000-1350		BV5000-2250	
Tripod	ROV	Tripod	ROV
<b>Sonar</b>			
Max Range	30 m (98 ft.)	30 m (98 ft.)	10 m (32 ft.)
Optimum Range	1 - 20 m (3.2 - 65 ft.)	1 - 20 m (3.2 - 65 ft.)	0.5 - 7 m (1.6 - 23 ft.)
Beam Width	1° x 1°	1° x 1°	1° x 1°
Beam Spacing	0.18°	0.18°	0.18°
Time Resolution	0.015 m (0.59) in.	0.015 m (0.59) in.	0.010 m (0.39 in.)
Operating Frequency	1.35 MHz	1.35 MHz	2.25 MHz
<b>Interface</b>			
Supply Voltage	120 - 240 VAC	24 VDC	120 - 240 VAC
Power Consumption	45 W max.	45 W max.	45 W max.
Connectivity	Ethernet/USB	Ethernet/RS485	Ethernet/USB
<b>Mechanical</b>			
Weight in Air	40.2 lbs.	21.7 lbs.	37.6 lbs.
Weight in Water	17.5 lbs.	8.2 lbs.	15.3 lbs.
Depth Rating	300 m (1,000 ft.)	To 3,000 m (9,842 ft.)	To 3,000 m (9,842 ft.)
Sonar, Pan & Tilt (L x W x H)	10.5 x 9.2 x 15.4 in.	10.5 x 9.2 x 15.4 in.	8.9 x 8.6 x 15.4 in.
Tripod (H x W, extended)	40 x 47 in.	N/A	40 x 47 in.

## 3D Selection Guide

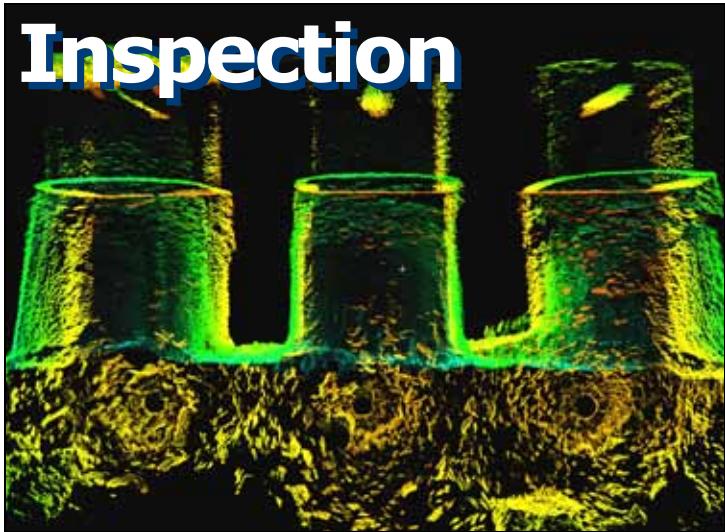
The BV5000 Systems are engineered to cover a wide range of applications and are adaptable to varied operational conditions. Below is a list of basic applications and common operating conditions with the recommended system solution.

### Application Legend

- -Best
- -Better
- -Good
- -Not Recommended

Operating Conditions/Applications	BV5000-1350	BV5000-2250
Low/zero visibility	<span style="color: red;">●</span>	<span style="color: red;">●</span>
Large structures and/or sites	<span style="color: red;">●</span>	<span style="color: blue;">○</span>
Spool piece metrology	<span style="color: red;">●</span>	<span style="color: darkblue;">●</span>
Ultra-high 3D image resolution	<span style="color: blue;">○</span>	<span style="color: red;">●</span>
3D object modeling	<span style="color: blue;">●</span>	<span style="color: red;">●</span>
3D structure modeling	<span style="color: red;">●</span>	<span style="color: blue;">○</span>
Change detection	<span style="color: red;">●</span>	<span style="color: darkblue;">●</span>

# Inspection



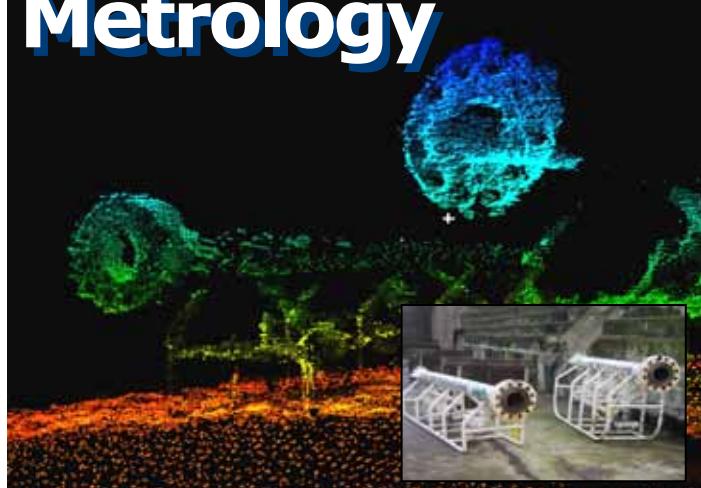
## Detailed 3D Structure and Site Inspections

The BV5000-1350 is perfectly suited for detailed inspections of underwater structures and sites providing engineers with fully rotational 3D imagery and the critical measurement data needed for as-is condition monitoring. This imagery example shows three dam draft tubes from the outflow exit back to the control doors over 25 meters deep into the structure. From this image engineers can identify blocking debris, structure damage, or bottom changes to determine a course of action. Similar studies can be done on almost any underwater structure.

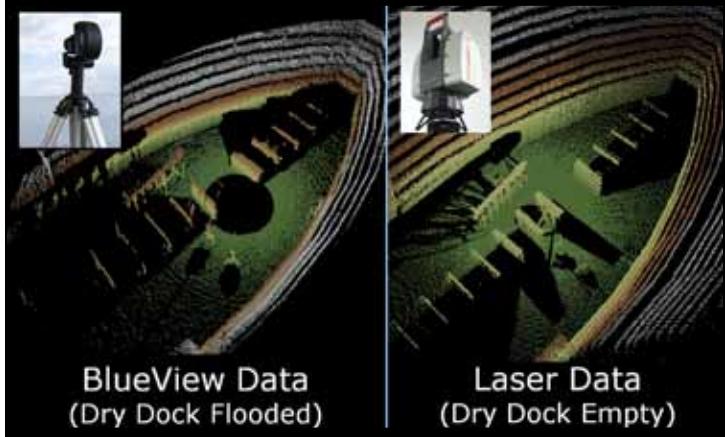
## Faster, Easier, Accurate Measurements for Modeling

BlueView is focused on delivering a practical and effective solution for spool piece metrology and similar applications. Initial testing of the BV5000 system as a spool piece metrology tool have yielded results similar to topographic laser scanners. Unaffected by water clarity and operational without complex positioning data inputs, the BV5000 can rapidly produce 3D point clouds to create models for CAD export when using Leica Geosystems' Cyclone software. The imagery shows two test pipe flanges submerged in a dry dock test and imaged with the BV5000. Initial results showed approximate uncertainties of less than 4 cm and 1° of angle at 30 meters.

## Metrology



# Survey



## As-Is/As-Found 3D Monitoring of Structures and Sites

Underwater structures subjected to harsh environments and potential threats require constant monitoring to determine changes over time. The BV5000 is uniquely suited for the task with its flexible deployment design delivering high-resolution imagery and data to detect changes over time, or as the result of an event. The imagery shows a comparison of topographic laser scanner and BV5000 data sets, note the nearly identical level of detail. The laser scan was taken in an empty dry dock, and the BV5000 scan was taken in the same dry dock after flooding.

# AUV

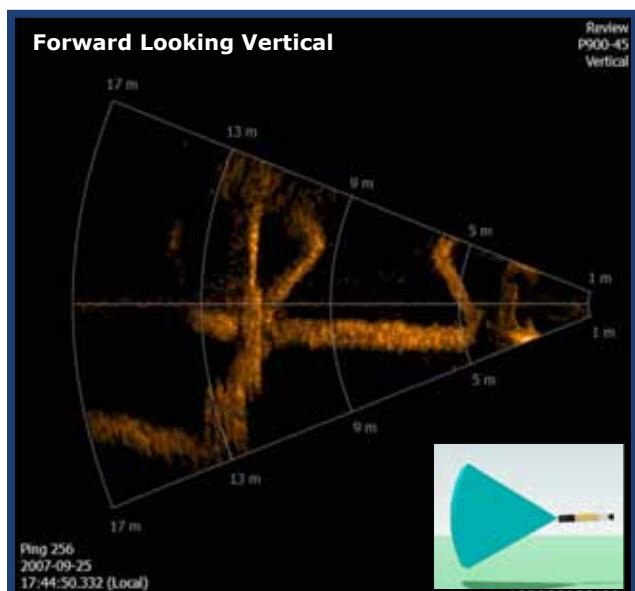
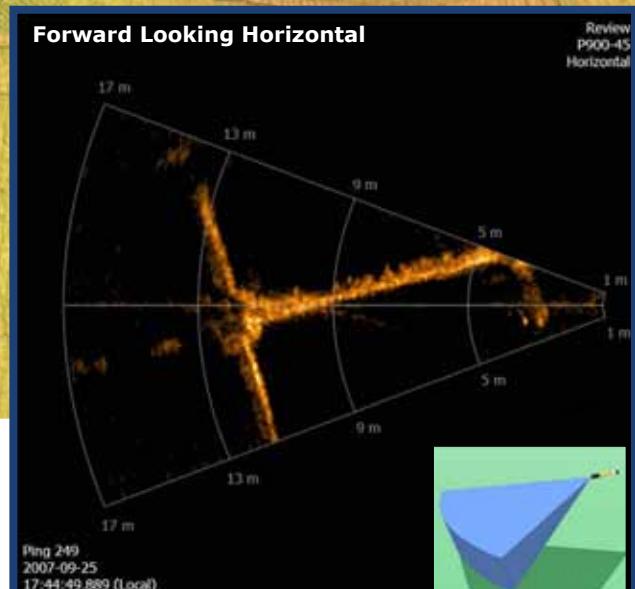


## 2D & 3D Component Modules for AUV System Integration

BlueView is recognized as the leading manufacturer of integrated AUV sonar systems for real-time control and surveying applications. Our unique technology allows BlueView to offer some of the most technologically advanced, light-weight, low-power systems for AUV manufacturers and operators. Component modules for AUV integration include 2D and 3D sensors for:

- Obstacle Avoidance
- Gap Fill
- Navigation
- Target Homing
- Confined Area Search
- Mine Hunting
- Area Mapping
- Object Identification
- Pipeline Tracking & Inspection

Specialized applications and new frontiers in AUV underwater imaging solutions are the hallmark of BlueView research and development projects. BlueView streamlines the process of taking new, cutting-edge concepts and creating deployment-ready solutions that meet the specialized needs and demands of AUV manufacturers and operators worldwide.

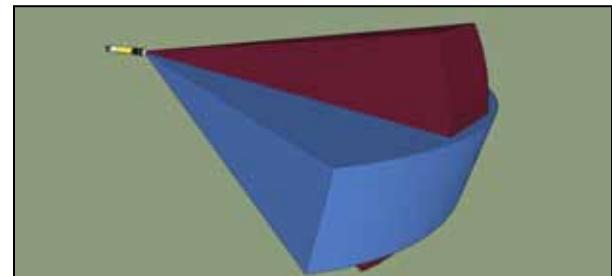


## Component AUV Modules

BlueView AUV component modules are compact, lightweight, low-power, and can be customized to fit new or existing platforms. BlueView AUV systems are currently deployed on most major AUV platforms.

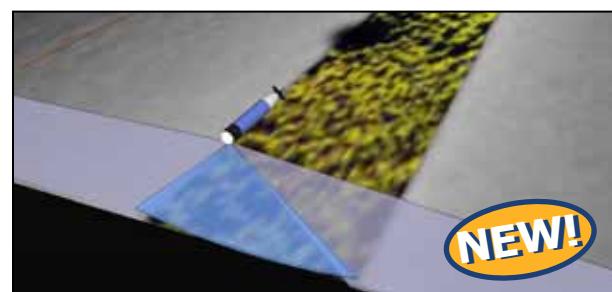
### 2D Forward Looking Solutions

BlueView offers the most comprehensive family of compact, high-resolution 2D systems for new and existing AUV platforms. All BlueView 2D systems are available with BlueView's ProViewer® Software Development Kit (SDK), customized housings, and unparalleled integration support.



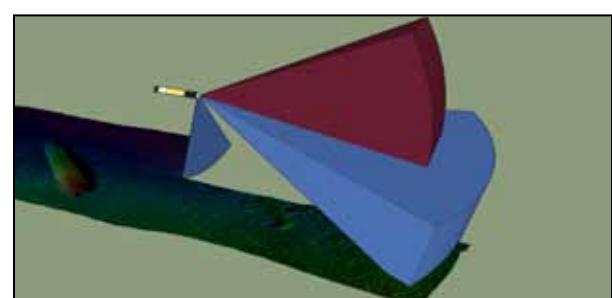
### 3D Gap Fill Solutions

BlueView's unique 3D gap filling MicroBathymetry solution provides high resolution imagery for side scan gap-filling and target identification in the region directly below the AUV typically associated with side scan coverage gaps. BlueView's 3D MicroBathymetry systems enable faster, more effective area coverage and significantly reduce mission times.



### Modular Solutions

BlueView's modular AUV sonar development services are employed worldwide by leading AUV manufacturers and operators. BlueView specializes in taking challenging ideas from proof-of-concept to deployment-ready solutions.



# AUV Specs & Applications

## AUV Selection Guide

BlueView's AUV systems are engineered to cover a wide range of applications and are available in 2D Forward Looking and 3D MicroBathymetry platforms. Both platforms are highly configurable and can be customized to fit new or existing AUV platforms. Below is a list of basic specifications and general applications.

2D Forward Looking Systems			
	FL900X	FL450X	
<b>Sonar</b>			
Field-of-View	130° x 20° Horizontal 45° x 20° Vertical	130° x 15° Horizontal 45° x 15° Vertical	
Max Range	100 m (328 ft.)	280 m (918 ft.)	
Optimum Range	4 - 60 m (13 - 196 ft.)	5 - 100 m (16.4 - 328 ft.)	
Update Rate	Up to 15 Hz	Up to 15 Hz	
Operating Frequency	900 kHz	450 kHz	
Depth Rating	300 m (1,000 ft.) 3,000 m (9,842 ft.)	300 m (1,000 ft.) 3,000 m (9,842 ft.)	
<b>Interface</b>			
Supply Voltage	12 - 48 VDC	12 - 48 VDC	
Power Consumption	28 W/38 W max.	30 W/40 W max.	
Connectivity	Ethernet	Ethernet	
<b>Application</b>			
	Target Detection & Tracking	Obstacle Avoidance	
3D MicroBathymetry & Gap Fill Systems			
	MB2250	MB1350	MB900
<b>Sonar</b>			
Field-of-View	45° or 90°	45° or 90°	45°
Max Range	10 m (33 ft.)	30 m (98 ft.)	100 m (328 ft.)
Optimum Range	0.5 - 7 m (1.6 - 23 ft.)	1 - 20 m (3.2 - 65 ft.)	2 - 50 m (6.5 - 164 ft.)
Time Resolution	0.010 m (0.39 in.)	0.015 m (0.59 in.)	0.023 m (0.89 in.)
Update Rate*	Up to 40 Hz	Up to 40 Hz	Up to 40 Hz
Operating Frequency	2.25 MHz	1.35 MHz	900 kHz
Depth Rating	300 m (1,000 ft.) 3,000 m (9,842 ft.)	300 m (1,000 ft.) 3,000 m (9,842 ft.)	300 m (1,000 ft.) 3,000 m (9,842 ft.)
<b>Interface</b>			
Supply Voltage	12 - 48 VDC	12 - 48 VDC	12 - 48 VDC
Power Consumption	10 W/12 W max. (45°) 15 W/18 W max. (90°)	12 W/14 W max. (45°) 19 W/24 W max. (90°)	16 W/20 W max. (45°)
Connectivity	Ethernet	Ethernet	Ethernet
<b>Application</b>			
	Low Altitude (< 7 m) Target Identification and UUV Gap Fill	Medium Altitude (< 25m) Target Identification and UUV Gap Fill	High Altitude (< 50 m) Target Identification and UUV Gap Fill

\* With Pentium M 1.4 GHz processor

## Not seeing what you're looking for?

Contact BlueView AUV Sales at +1 (206) 812-3018 or at [aув@blueview.com](mailto:auv@blueview.com) for more information.

## Navigate



## Real-Time Navigation and Obstacle Avoidance

BlueView's compact 2D Forward-Looking Imaging Systems deliver the leading edge in imaging sonar technology. Commonly referred to as acoustic cameras, BlueView expanded the field of ready-to-deploy systems with multiple options that include ultra wide field-of-view, fast update rate, high-resolution imagery, and accurate data. BlueView also combines horizontal and vertical fields-of-view into a system that delivers unmatched real-time imagery and target data feedback.

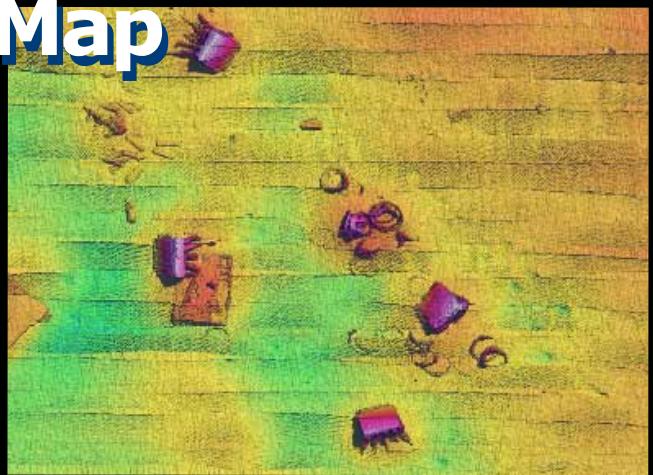


## Faster, Easier Wide Area Mapping Without the Gaps

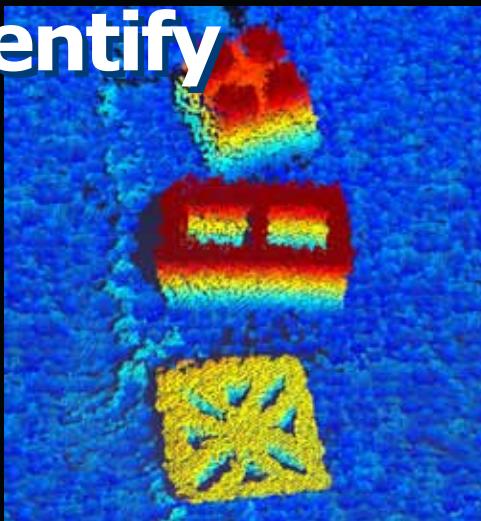
AUV manufacturers can now offer operators significantly reduced mission times when mapping large bottom areas. BlueView engineered the first 3D Downward-Looking MicroBathymetry System to fill the data gap directly below an AUV commonly associated with traditional side-scan systems. The new compact BlueView gap-fill system captures ultra-high resolution imagery and data while providing seamless swath coverage, significantly reducing the number of overlapping passes required.



## Map



## Identify

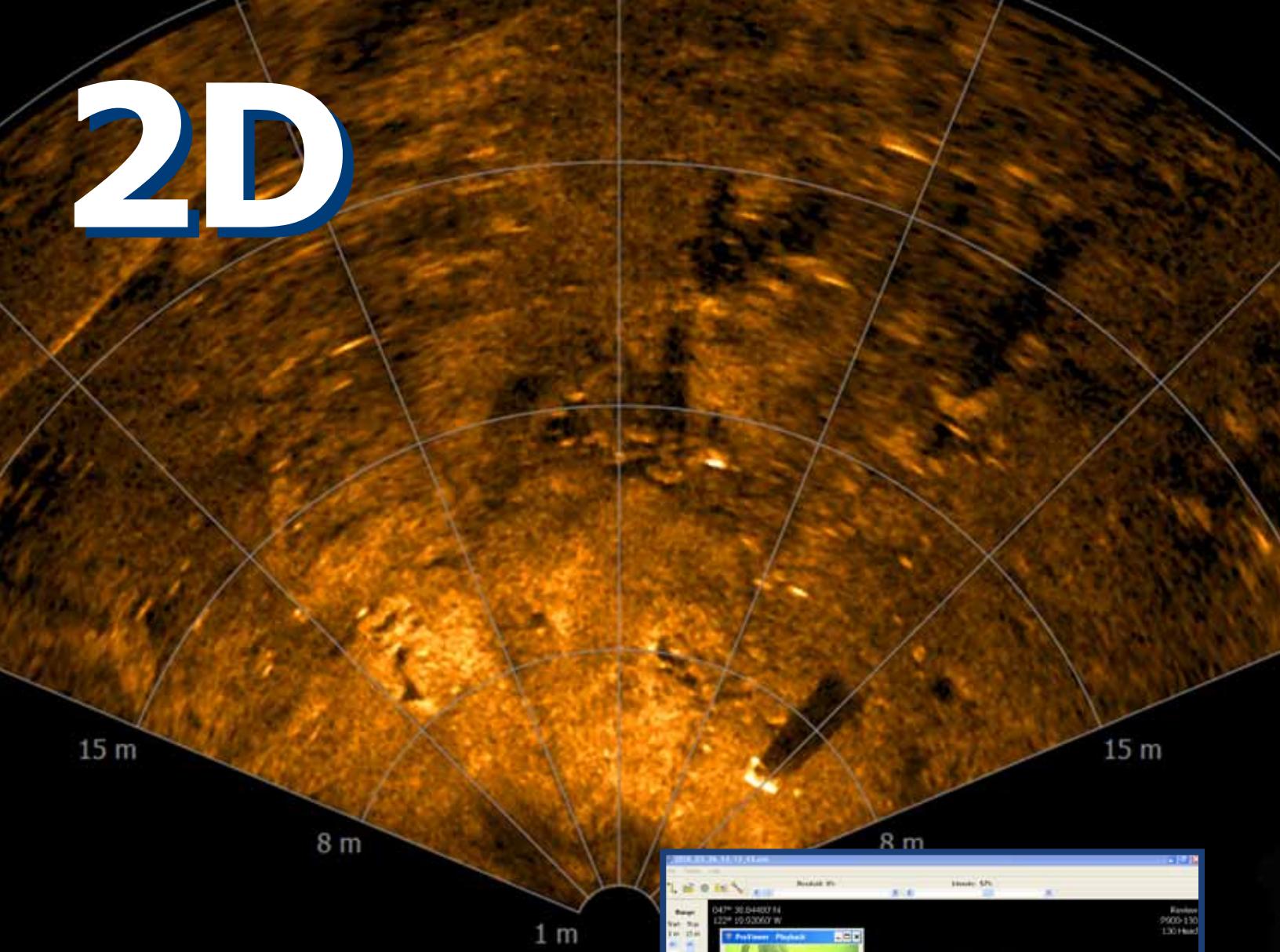


## Object ID, Even in Low and Zero Visibility Conditions

BlueView's compact, low-power 3D MicroBathymetry systems create extremely detailed 3D renderings of complex underwater objects and the sea bottom. Operating at higher frequencies than traditional bathymetric sonar, BlueView's 3D MicroBathymetry systems capture high-resolution data and enable easy integration onto new or existing AUV platforms. The illustration shows the level of detail captured using the MB2250 when three common cinder blocks were imaged at a distance of 1 m.



# 2D



## Acoustic Cameras

BlueView 2D Imaging Sonar delivers real-time, high resolution video-like imagery, even in low and zero visibility conditions. Fast update rates, high acoustic frequencies, and compact size make BlueView the preferred choice in leading edge acoustic cameras. With the widest range of 2D imaging sonar models available, BlueView offers you choices in field-of-view, range, and depth.

BlueView makes using your 2D Imaging Sonar easy with "plug-and-go" operation and multiple deployment options, including:

- ROV systems
- Diver hand held systems
- Boat mounted systems
- AUV systems
- Portable tripod systems
- Fixed position systems

All BlueView 2D Imaging Sonar systems include BlueView's ProViewer® operating software, accessories and one year warranty. BlueView also offers an advanced Software Development Kit (SDK) that enables access to raw data files and sonar controls to make integration into complex monitoring systems easy.



### Typical Real-Time Applications:

- ROV Navigation
- Operations Monitoring
- Search & Recovery
- Target Tracking
- Structure Inspection
- Area Survey
- Damage Survey
- Material & Equipment Placement
- Pipeline Tracking & Inspection
- Object Detection
- Obstacle Avoidance
- Target Homing

## 2D Imaging Sonar Systems

BlueView has the widest selection of high-resolution acoustic cameras available. Each model features fast update rates which deliver impressive detailed imagery, and include record/play-back features for post analysis work.

### P Series

A complete family of high performance 2D Imaging Sonar Systems engineered for multi-tasking applications and flexible deployment options. Choose from a variety of range capabilities, or field-of-view options including the ultra-wide 130°. All P Series systems feature compact, lightweight, low-power designs and fast update rates.



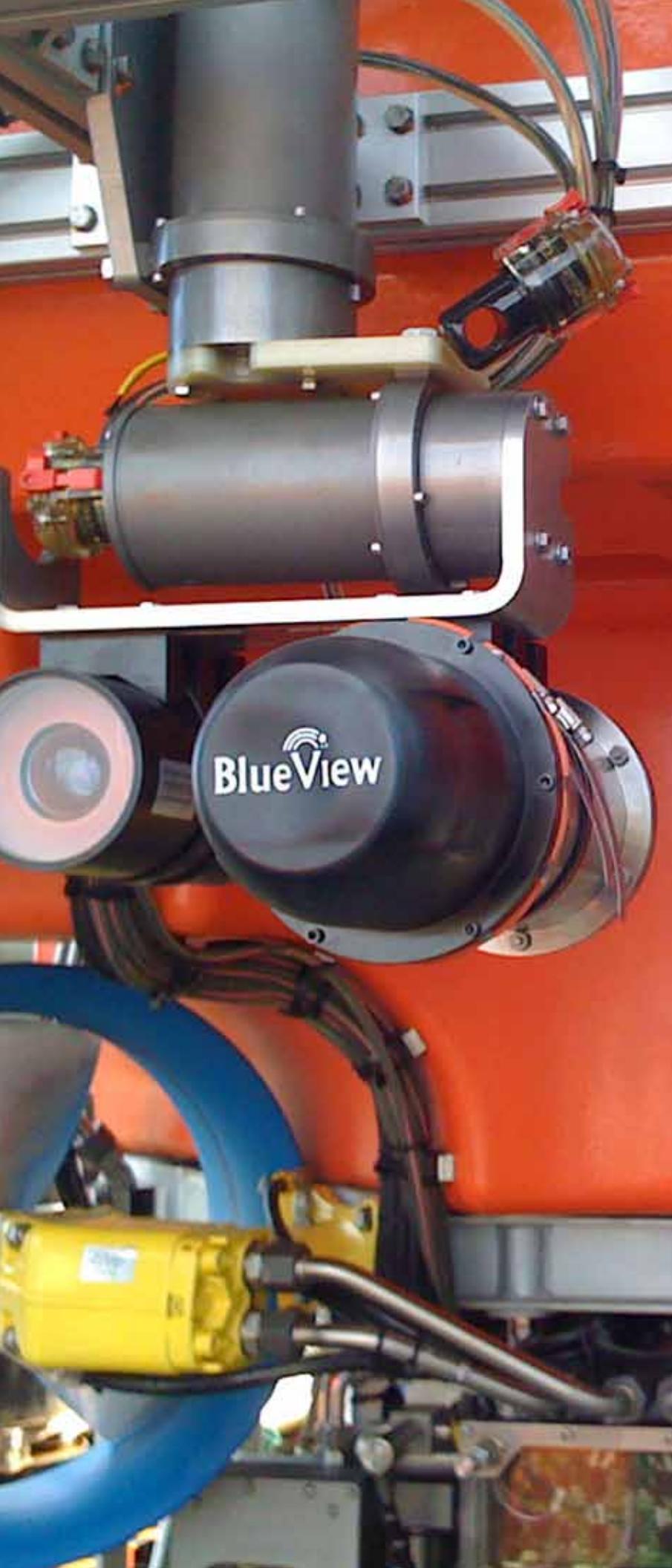
### P Series Deepwater

BlueView re-engineered the P Series to create the smallest deepwater solutions that meet the stringent requirements for ROV operations. Able to operate at depths of 4,000 m (13,123 ft.) the deepwater imaging sonar delivers unparalleled real-time imagery to enhance ROV operations.



### Dual Frequency

BlueView's Dual Frequency 2D Imaging Sonar combines the power of a medium range navigation and inspection sonar with the identification capabilities of an ultra-high frequency sonar in a single unit. The dual purpose acoustic camera enables switching between both frequencies while in operation and in post analysis.



# 2D Specs & Applications

	P Series		P Series Deepwater		Dual Frequency
	P450-45, P450-90, P450-130	P900-45, P900-90, P900-130	P450-90-D, P450-130-D	P900-90-D, P900-130-D	P900-2250-45
<b>Sonar</b>					
Operating Frequency	450 kHz	900 kHz	450 kHz	900 kHz	900 & 2250 kHz
Update Rate	Up to 12 Hz	Up to 15 Hz	Up to 12 Hz	Up to 15 Hz	Up to 15 Hz
Field-of-View	45°, 90°, 130°	45°, 90°, 130°	90°, 130°	90°, 130°	45°
Max Range	250 m (820 ft.)	100 m (328 ft.)	250 m (820 ft.)	100 m (328 ft.)	60 m/8 m (195/26 ft.)
Optimum Range	4 - 175 m (13 - 574 ft.)	2 - 60 m (6.5 - 197 ft.)	4 - 175 m (13 - 574 ft.)	2 - 60 m (6.5 - 197 ft.)	2 - 30/0.5 - 5 m (6.5 - 98/1.6 - 16 ft.)
Beam Width	1° x 20°	1° x 20°	1° x 20°	1° x 20°	1° x 20°
No. of Beams	256, 512, 768	256, 512, 768	512, 768	512, 768	256
Beam Spacing	0.18°	0.18°	0.18°	0.18°	0.18°
Range Resolution	2.0 in.	1.0 in.	2.0 in.	1.0 in.	1.0 & 0.4 in.
<b>Interface</b>					
Supply Voltage	12 - 48 VDC	12 - 48 VDC	12 - 48 VDC	12 - 48 VDC	12 - 48 VDC
Power Consumption	8.5 W/9.5 W max. (45°) 20 W/24 W max. (90°, 130°)	9.0 W/9.5 W max. (45°) 18 W/22 W max. (90°) 19 W/23 W max. (130°)	17 W (23 W max.)	17 W (23 W max.)	15.5 W (18 W max.)
Connectivity	Ethernet/VDSL*	Ethernet/VDSL*	Ethernet	Ethernet	Ethernet
<b>Mechanical</b>					
Weight in Air	5.7 lbs. (45°) 9.8 lbs. (90°, 130°)	5.3 lbs. (45°) 5.7 lbs. (90°, 130°)	16.7 lbs.	9.6 lbs.	6.0 lbs.
Weight in Water	1.4 lbs. (45°) 4.9 lbs. (90°, 130°)	1.3 lbs. (45°) 1.4 lbs. (90°, 130°)	7.9 lbs.	4.4 lbs.	1.5 lbs.
Depth Rating	1,000 m (3,280 ft.)	1,000 m (3,280 ft.)	4,000 m (13,123 ft.)	4,000 m (13,123 ft.)	300 m (984 ft.)
Size L x W (Max OD)	9.6 x 6.9 in. (45°) 12.7 x 7.1 in. (90°, 130°)	11.3 x 5.0 in.	15.8 x 8.0 in.	12.4 x 5.0 in.	8.3 x 5.0 in.

## 2D Selection Guide

BlueView offers the widest selection of ready-to-deploy 2D Imaging Sonar to cover an ever expanding range of underwater applications. Below is a list of basic applications and recommended solutions.

### Application Legend

- -Best
- -Better
- -Good
- -Not Recommended

Conditions / Applications	P Series		P Series Deepwater		Dual Frequency
	P450 (45°, 90°, 130°)	P900 (45°, 90°, 130°)	P450-D (90°, 130°)	P900-D (90°, 130°)	P900-2250-45 (45°)
Low/Zero Vis	●	○	●	●	●
Intro Level	●	●	○	○	○
Long Range	●	○	●	○	○
Deepwater	○	○	●	●	○
Object ID	○	●	○	●	●
Detect & ID	○	●	○	●	●
Wide Area	●	●	●	●	○
Boat/Surface	●	●	○	○	○
ROV	●	●	●	●	●

# Navigate



## Real-Time Navigation

High-resolution imagery, fast update rate, and accurate measurement data characterize BlueView 2D Imaging Sonar. With the widest selection of models available BlueView can help you choose the best model for your navigation needs. Need to go deep? BlueView deepwater systems feature the most compact solutions available and easily fit next to a video camera. BlueView deepwater systems are specifically designed for inspection and work class ROVs that operate at depths up to 4,000 m (13,123 ft.). ROV manufacturers and operators worldwide depend on BlueView to deliver reliable performance in harsh, demanding environments.



# Faster, Easier, Safer Search and Recovery

Multi-tasking systems with "hot-swap" capabilities make BlueView's 2D Imaging Sonar the perfect solution for critical search and recovery operations. Acting as acoustic cameras that penetrate low and zero visibility conditions, BlueView 2D imaging Sonar can detect targets from surface vessels and guide divers directly to the target avoiding hazards and minimizing in-water search times. Portable ROVs outfitted with a BlueView 2D Imaging Sonar System become powerful search and inspection tools that can access hazardous, hard to reach areas minimizing the exposure of divers.



## Search



# Monitor



## Real-Time Monitoring Even in Low/Zero-Visibility Conditions

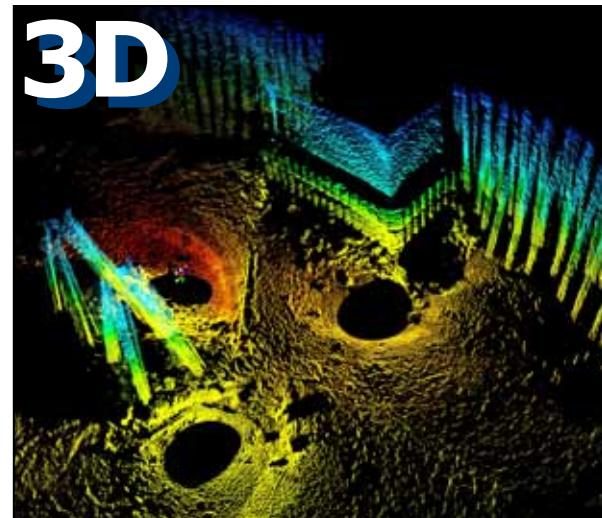
The fast update rate and unmatched, high resolution imagery of BlueView 2D imaging Sonar result in the perfect acoustic camera to monitor underwater operations and activity. Able to penetrate low and zero-visibility conditions, BlueView offers systems that can track moving objects up to 175 m (574 ft.) away and see object details at 5 m (16 ft.). With a wide variety of models available, BlueView can help you select the right system to monitor divers, place equipment or material, track targets, and monitor activity around or near sensitive underwater structures and access points.



# Software & Accessories

## ProScan® 3D Software

BlueView offers a full suite of 3D software solutions for detailed, accurate 3D imagery and measurements. At the heart of the suite is BlueView's ProScan 3D Software that provides real-time scan control, monitoring, and data post processing. ProScan exports industry standard point clouds in .xyz file formats for seamless export to most 3D processing systems. BlueView ProScan Software is included with all BV5000 systems, and can be installed on multiple PCs without additional licensing fees. Online updates available at [www.blueview.com](http://www.blueview.com).



## BV5000 3D Mechanical Scanning Software Solutions

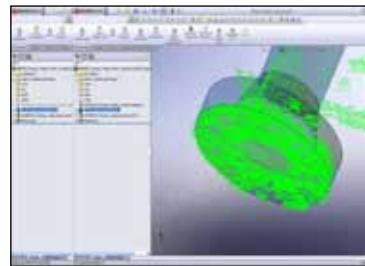
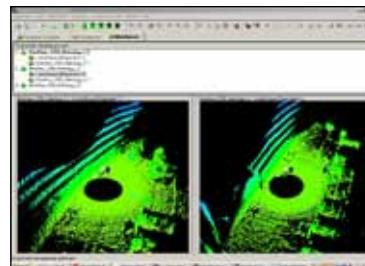
Four (4) separate software packages that can run as stand-alone programs or integrated with the BV5000 3D Mechanical Scanner for a complete underwater 3D imaging system. Scan, view, register multiple 3D scans, and generate CAD compatible models using this integrated software system.

## Leica GeoSystems' Cyclone Software

BlueView Technologies is a licensed distributor for Leica GeoSystems and offers two powerful software options for the BV5000 Mechanical Scanning Systems. Leica Geosystems' Cyclone software enables the creation of registered 3D images using two or more point cloud scans. Leica offers two licensing options for their Cyclone software: Node-locked which limits access to a single PC, or a floating license that enables usage on multiple PCs.

### Leica Geosystems Cyclone Advantages:

- Exports 3D point clouds for CAD modeling
- Industry's largest, most complete set of tools for accurately modeling 3D point clouds



### Cyclone-REGISTER

Optional Leica Geosystems software, "cleans" 3D data and combines individual 3D scans to create mosaic imagery.

### Cyclone-MODEL

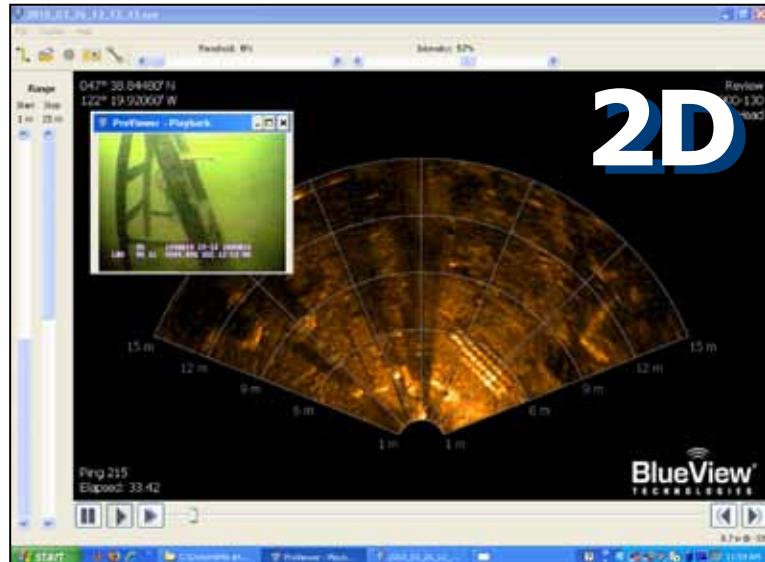
Optional Leica Geosystems software, generates CAD exportable models of standard components.

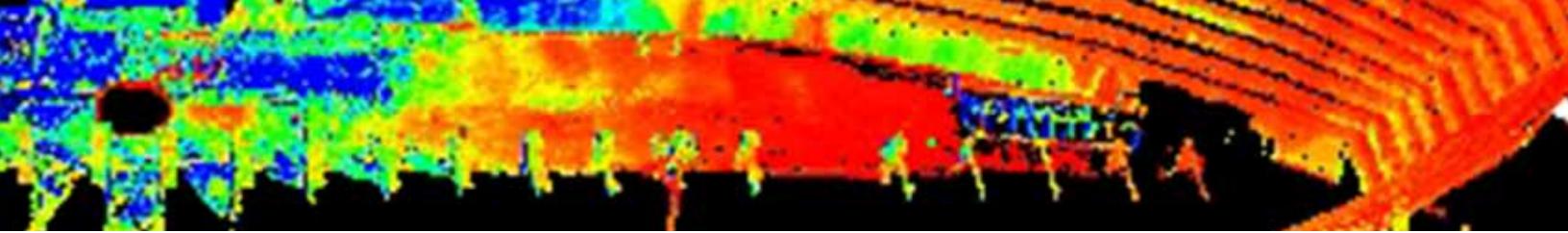
## ProViewer® 2D Software

Engineered to work with all BlueView 2D Imaging Sonar to deliver high-resolution video-like imagery and point-to-point measurements. The intuitive Windows® based software captures and stores data files in .son and .xml formats for easy access, post processing, analysis, and reporting. ProViewer is included with all BlueView 2D Imaging Sonar, and can be installed on multiple PCs without additional licensing fees, online updates available at [www.blueview.com](http://www.blueview.com).

### ProViewer® Advantages:

- Intuitive, easy-to-use controls
- Point-to-point measurement
- .jpg and .avi file exports
- Sonar and video synchronization
- No licensing fees
- Online updates





## Sonar Software Development Kit (SDK)

BlueView offers a Software Development Kit that is engineered to enable sonar integration into complex platforms and/or customized systems. The SDK enables control of the sonar and provides access to the raw data files to control sonar operation and enable data flow-through. Customize sonar operations (start/stop, ping rate, image size, etc.), create custom data files, or create customized viewership of the sonar imagery with the SDK.

### Features:

- Single, easy-to-use kit comes complete in a single .zip file
- Windows® and Linux versions available
- C/C++ libraries included
- Documentation to review software architecture and logic
- Easy reference manual and step-by-step guide included
- Example files show how to use each software component
- No licensing fees

## BlueView Extended Warranties

Protect your underwater vision investments with an extended warranty from BlueView Technologies, Inc. Extended warranties are available for all imaging sonar systems and can be purchased in 1 year increments. Contact BlueView Customer Support for details at +1(206) 812-3020 or via email at support@blueview.com.

## Sonar Deployment Accessories

Engineered for quick and easy deployment of BlueView 2D Imaging Sonar Systems.

### Manual Pole Mount System

Enables quick and easy deployment of any 2D Imaging Sonar from a surface vessel or platform, and allows manual tilt angle adjustments of the sonar head. Includes: 2-piece 77.5" pole, sonar clamp, quick-release mounting clamp, carrying case, and accessories.



### BV3100 Portable Boat Mount System

Ideal for search and recovery operations, diver monitoring, and underwater inspections. Compatible with all BlueView 2D Imaging Sonar to create a topside underwater viewing system. Includes: 2-piece 77.5" pole, digitally controlled pan & tilt, quick-release mounting clamp, carrying case, and accessories.



### BV4000 Portable Tripod with Digital Pan & Tilt

For stationary positioning of BlueView 2D & 3D imaging sonar systems. Digitally controlled pan & tilt controls the angle and rotation of the sonar head. Lightweight, one-man deployable system is engineered for rugged underwater environments. Includes: Portable tripod, pan & tilt, sonar mounting plate, and carry bag.



### Ethernet Extenders

Extends sonar communication distances. Both units depth rated to 300 m (1,000 ft.).



**EXC-300** for extended 2D Imaging Sonar distances up to 2,000 ft. for ROV systems.

**EXC-500** for extended distances up to 500 ft. for 3D Mechanical Scanning Systems.

### Cables

BlueView provides a wide variety of cables to test and operate its 2D and 3D systems. Cables are available in the standard lengths:

- Sonar Cables
- Sonar, Pan & Tilt Cables
- Cable Whips

Standard connectors include: Titan, SeaNet, and MSSJ.



### Sonar Clamp

Engineered to fit all BlueView 2D Imaging Sonar and enable quick on-and-off mounting onto an existing structure or platform.



Rugged, lightweight clamp features two (2) heavy duty bolt mounting points for easy installation onto a flat surface.

## Visit Us On The Web

BlueView is passionate about delivering high quality underwater vision solutions that make your operations easier, faster, and safer. Visit us online for the latest product news, stories and examples from our customers, and downloadable BlueView software updates.

### New Product Selector

In 2011 BlueView will launch an interactive online product selector to help you select the right model(s) based on what you need to do and the underwater environment where you need to do it. Watch for the announcement online at [www.blueview.com](http://www.blueview.com).

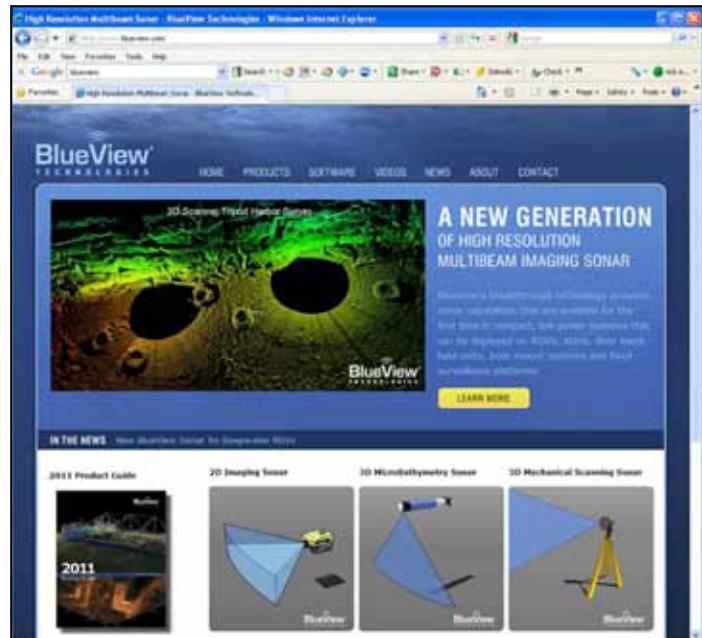


### Case Study Videos

Operators, partner companies, and industry organizations often share their successes and unique applications with us and offer valuable information, insights, and operational tips. Check the "Videos" section on our website for these Case Studies.

### Sonar Movies

Visit the "Videos" section of our website which features actual sonar "movies" captured with BlueView equipment. If you prefer, download ProViewer® or ProScan® then view the associated sample data files to review data sets just as they would appear on your PC when using BlueView imaging sonar systems. Visit the "Software Solutions" section of our website for quick and easy downloads.



### Software and Information Downloads

Need detailed product specifications? Want to sample BlueView's 2D or 3D software? BlueView online features extensive product information downloads – data sheets, technical drawings, user manuals, CAD STEP files, and more. Current software and example data sets are also available online, download BlueView's ProViewer® or ProScan® software and sample data sets for hands-on testing.

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